EXPOSURE TO SECONDHAND SMOKE AND REPRODUCTIVE OUTCOMES BY MATERNAL HISTORY OF ASTHMA

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Background and Aims: Cigarette smoking in women is highly prevalent in South European countries. Multiple studies confirm that tobacco consumption is associated with reduced birthweight. Less clear is the reproductive effects of secondhand smoke (SHS) exposure. An issue that has not been clarified is the reproductive effect of these exposures among subgroups, and particularly the potential higher risk among mothers with a history of asthma. We assessed the role of pre-natal maternal tobacco use and SHS on reproductive outcomes and assessed the interaction with maternal history of asthma.
Methods: Data was collected from two birth cohorts, the INMA study, established in Spain and the Rhea study in Crete, Greece. Given that decreased birthweight is determined mostly by exposure to smoking during the later half of pregnancy we measured cotinine at the 32 weeks of pregnancy in 2219 and 510 women, respectively.
Results: All women had detectable levels of cotinine. Only 35% and 3% reported not being exposed to SHS or active smoking in the INMA and Rhea cohorts, respectively. Active smoking (cotinine>100ng/mL) was related to a 150g decrease in birthweight and a relative risk of 2 for small for gestational age and fetal growth restriction only in the INMA cohort. Among those exposed to SHS (cotinine:20-100ng/mL) the decrease in birthweight was 20 and 26g, respectively, but these differences could be due to chance. These results were not modified by maternal asthma. Household exposure to SHS was associated with lower birthweight, but only in the Greek cohort.
Conclusions: In countries with high prevalence of smoking and SHS exposure, cotinine levels compatible with no active smoking during the third trimester of pregnancy had a non-significant decrease in birthweight or impaired reproductive outcomes, perhaps due to the lack of unexposed women. Maternal history of asthma did not modify the results.
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